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TP 1624

Marine Casualty Investigations

Enquêtes sur les accidents maritimes

Investigation Report to the Minister pursuant to sections 542 or 545 of the Canada Shipping Act

Rapport d'investigation au Ministre conformément aux articles 542 ou 545 de la Loi sur la marine marchande du Canada

Canada

Ce rapport est aussi disponible en français.

REPORT OF INVESTIGATION INTO THE CIRCUMSTANCES ATTENDING THE FLOODING OF THE SMALL CANADIAN FISHING VESSEL "FLINSTONE I" AND THE DEATHS OF HER FOUR CREW MEMBERS, OFF POINTE ESCUMINAC, N.B., MAY 11, 1987.

REPORT No. 491

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REPORT OF INVESTIGATION INTO THE CIRCUMSTANCES ATTENDING THE FLOODING OF THE SMALL CANADIAN FISHING VESSEL "FLINSTONE I" AND THE DEATHS OF HER FOUR CREW MEMBERS, OFF POINTE ESCUMINAC, N.B., MAY 11, 1987.

Particulars of Vessel

Name	"FLINSTONE I"
Licence Number	6C 4563
Port of Registry	Moncton, N.B.
Canadian Fishing Vessel	018523
Tonnage	under 15 GRT
Length	12.16 m
Breadth	4.08 m
Depth	1.83 m
Type	Small Fibreglass Fishing vessel
Built	1983, Baie-Sainte-Anne, N.B.
Propulsion	4-cylinder, John Deer JD 276 diesel motor, 82 b.h.p., 61 kW, driving a single fixed-pitch propeller
Crew	4 persons
Owner	Joseph A. Vautour Richibucto, N.B.

Description of Fishing Vessel

The "FLINSTONE I" is a small open vessel of fibreglass construction under 15 GRT. She was thus not subject to inspection by the Ship Safety Branch of the Canadian Coast Guard.

At the time of the casualty, four bunks were arranged in the forward section of the vessel; abaft was the wheelhouse. The main engine was located near the centre of the vessel. The fish-well occupied all of the after section of the vessel and was divided by a portable fore-and-aft centreline bulkhead and two transverse portable bulkheads all constructed of wood and the fish-well could be closed by plywood panels. The operator was licensed to fish for herring, mackerel and lobster.

Navigating Equipment

The navigating equipment was restricted to:

Magnetic compass	one
C.B. Radio	one
Echo Sounder	one
Loran C	one

Particulars of Deceased

Name	Oliver Frigault
Position aboard Vessel	Crew member
Age	43
Address	St-Charles, N.B.
Name	Joachim Chevarie
Position aboard Vessel	Crew member
Age	51
Address	St-Charles, N.B.
Name	Fernand Ouellette
Position aboard Vessel	Crew member
Age	29
Address	Richibucto, N.B.

Particulars of Missing Person

Name	Joseph Vautour
Position aboard Vessel	Operator
Age	38
Address	St-Charles, N.B.

NOTE: 1. All times expressed in this report are in Atlantic Daylight Saving Time (UTC minus 3 hours).

2. The "FLINSTONE I" is not the official name of this licensed vessel; it is the name given by the family and has been used throughout this report.

Background

On May 10, 1987 the small fishing vessel, "FLINSTONE I", departed Richibucto, N.B. bound for herring fishing grounds in the Escuminac area, located some 30 nautical miles north on the east coast of New Brunswick.

The herring was spawning; the nets were cast and rapidly filled. It was decided that the vessel would return to Richibucto during the night in order to unload her catch on Monday morning.

Around midnight, the weather was fine and clear, and the wind was light. The "FLINSTONE I" was returning to Richibucto when the operator, talking with other fishermen over the C.B. radio, mentioned that his vessel was settling down by the stern. After a few minutes, he reported she was sinking.

An intensive search was commenced immediately. About two and a half hours later, the half-submerged wreck and three of her crew were found. Unfortunately, they were pronounced dead on arrival at the hospital. At the time of writing this report, the operator's body had not yet been recovered.

Narrative

There are a large number of small open fishing vessels under 15 GRT operating off the New Brunswick east coast, in the Northumberland Strait. They are used mostly for lobster, herring and mackerel fishing.

In the spring of 1987, the herring began spawning in this area during the first week of May. Consequently, the catches were large and, by May 10, all processing plants in the area were overloaded. Most of the vessels remained in port and, as the plants were incapable of taking additional deliveries at that time, were awaiting the following day (May 11) before resuming fishing.

The situation was slightly different for a few fishermen in the Richibucto area whose buyer had found a limited

market. Thus shortly after noon on May 10, 1987, four fishing vessels departed this port bound for the fishing grounds near Miramichi Bay, or more precisely, Escuminac.

The four vessels arrived in Miramichi Bay, set their nets at about 1800 and then proceeded to the Escuminac wharf. There, a fourth person joined one of the vessels, the "FLINSTONE I", to help bring in the nets.

Convinced that the nets were already full because there was so much fish when they were set,the fishermen thought it preferable to haul the nets in right away, then return to Richibucto. However, for several reasons, they hesitated to do this: it would be night, the vessels would be loaded and the weather forecast called for westerly winds at 20 to 30 knots.

Finally the operators of the "FLINSTONE I" and the "ORCA V" decided to haul in their nets and return to Richibucto. The operators of the other two vessels decided to await dawn.

The smaller vessel "FLINSTONE I", completed hauling in her nets first and departed immediately for Richibucto. The "ORCA V" was unable to load all of her catch so, in order to haul in the last net, some herring from the nets was thrown back into the sea. She then departed the grounds at about 2330 bound for Richibucto.

The first vessel had already passed Pointe Escuminac when the buyer from Richibucto, contacted the "ORCA V" on C.B. radio and requested details on the size of the catch and her expected time of arrival in port. He then spoke to the operator of the "FLINSTONE I" who mentioned that the weather was fine, that everything was well, that he had a full load and that he hoped to be at the Richibucto light and bell buoy located at the mouth of the river at about 0300. The time was about 0010.

The operator of the "FLINSTONE I" continued talking over the radio. He spoke with, among others, the operator of one of the vessels from Richibucto which had remained at Escuminac wharf. During one of these conversations, he mentioned that the bow of his vessel seemed higher than at the beginning of the voyage and that he had sent his crew aft to investigate.

Shortly thereafter, he indicated that the aft compartment of his fish-well was full of water. Someone suggested throwing fish overboard but it did not seem that the vessel could be lightened fast enough to prevent her from settling

further. He then indicated that he was having trouble with the gasoline-operated pump and that he believed a herring was obstructing the suction hose.

The operator of the "FLINSTONE I" then began speaking non-stop with the switch of the radio microphone depressed, which prevented the other vessels from requesting his position. He was heard to inform his crew to put on their lifejackets and, two or three minutes later, he broadcast "we're sinking" and stopped transmitting. The operator of the "FLINSTONE I" was immediately and persistently asked to provide Loran C co-ordinates and shortly thereafter, the position was transmitted to the "ORCA V", the latter being astern of the "FLINSTONE I", some twenty minutes steaming time away. The Loran C co-ordinates were: 14868.8 and 30866.3. He added that he would direct a beam of light in the direction of the "ORCA V" in order to help her locate the sinking vessel. He was asked to repeat his position a second time, which he did and then there was silence.

Aboard the "ORCA V", the crew went on deck to keep a lookout for the vessel in distress. For a moment, a white light was seen in the distance before disappearing.

The operator of one of the vessels that was secured alongside the Escuminac wharf sent one of his crew ashore to immediately telephone the Coast Guard Rescue Centre.

The Rescue Coordination Centre Halifax (RCC) received the call at 0046. The Canadian Coast Guard Radio Station VCA in Charlottetown, P.E.I. was immediately instructed to transmit a 'MAYDAY' relay. A Buffalo aircraft, a helicopter and two vessels were dispatched to the area.

The "ORCA V" headed for the given position and, being loaded, her speed was restricted to no more than 5 knots. Unfortunately, the Loran C was not functioning properly on the 30000 co-ordinates. The operator then switched to the 14868.8 reading and followed it out of the coast while searching attentively hoping to locate the survivors. The night was clear, there was moonlight and a long swell of roughly 0.5 m. When the vessel reached a depth 15.2 m (50 feet), the operator felt that he was too far offshore and altered towards the coast.

Some 6 miles away, the Fisheries Patrol Vessel, "COLONEL BARRY" was stationed at Pointe-Sapin. A resident of the area, who was monitoring the C.B. radio, telephoned the residence of the master of the "COLONEL BARRY" and informed him of the situation. The master immediately phoned the RCC for confirmation of the incident and advised them that he was

available; the time was 0059. After being apprised of the situation, he was requested to depart. As the appointed engineer of the vessel lived about an hour away from Pointe-Sapin, the master requested permission from his superior to take one of the local residents in order to save time. Permission was granted.

At 0130, the "COLONEL BARRY" was bound for Pointe Escuminac. As he had no precise position of the distressed vessel, the master tried unsuccessfully to contact the fishermen on the C.B. radio by trying different channels. Finally, he saw the lights of a vessel and succeeded in establishing communication with her. The vessel was the "ORCA V" and she immediately transmitted the Loran C position of the distressed vessel.

The "COLONEL BARRY" headed at full speed towards the given position but the master quickly realized that it could not be the correct one. In fact, the 30066.3 reading was more than 60 miles to the east. The "COLONEL BARRY" then proceeded towards the "ORCA V" in order to verify the distressed vessel's position.

On arriving near the correct position finally obtained from the "ORCA V", the crew of the "COLONEL BARRY" saw the wreck of a vessel with only the stem projecting out of the water. Nearby, there was a person wearing a lifejacket. Assistance was immediately requested from the "ORCA V" and attempts were made to haul the victim aboard who was still alive but weak.

The crew of the "ORCA V", on approaching the wreck, could see two men wearing lifejackets, who seemed to be unconscious. A lifebuoy with a line attached was found floating in close proximity of the two men. It was difficult to haul them aboard because they were tangled in ropes.

The master of the "COLONEL BARRY" contacted the CGRS VCA in Charlottetown, P.E.I. at about 0245 and reported that he had found three of the victims. He gave his exact position and requested medical evacuation.

The helicopter arrived on the scene at 0300, the three victims were taken aboard and then transported to Chatham, N.B. where they were landed at 0454. A waiting ambulance transported them immediately to a local hospital.

During this time, the search continued for the operator. Divers searched the interior of the vessel to ensure that his body had not been trapped and by 0800 the search had been completed with negative results.

The same afternoon, two Fisheries and Oceans vessels towed the wreck of the "FLINSTONE I" to the Pointe-Sapin wharf, N.B. At the time of writing this report, the operator's body had not yet been recovered.

The casualty caused no pollution. The vessel sustained only water-damage.

Analysis

1. Weather conditions

The weather forecast issued by Environment Canada for the area at 1700 on May 10, 1987 was:

> Winds west 20 to 30 knots diminishing to light Monday afternoon. Cloudy becoming clear near midnight then becoming cloudy Monday evening. Temperatures near 4. Outlook for Tuesday, strong southeasterlies.

At the time of the incident, the wind was from the north-west at about 5 knots, visibility was good, the air temperature was 6°C and there was a slight swell of about 0.5 m coming from the same general direction as the wind.

2. Water temperature and hypothermia

The water temperature that night was 4.5°C. The chart contained in the Cold Water Survival pamphlet published by the Canadian Red Cross gives an indication of the survival time for an average adult immersed in water of various temperatures (see Annex 1).

According to this chart, the chances of survival are slim for a victim immersed in water for over an hour and a half at 5°C.

The "FLINSTONE I" was partially submerged at 0030. The bodies were recovered between 0230 and 0300. Therefore the victims, who were appropriately dressed for the season, were in the water for over two hours.

3. Vessel and equipment

Traditionally , small fishing vessels in New Brunswick were constructed of wood. It is only in the last few years that fibreglass has been used as a building material.

The location of the fish-well aboard the "FLINSTONE I" was slightly different from ones normally found aboard wooden vessels. In fact, on these wooden vessels, the hold usually ends a metre or more from the transom. This characteristic gives a certain reserve buoyancy at the after end of the vessel. Aboard the "FLINSTONE I", the hold ends roughly 0.3 m from the transom. When the vessel was loaded, her stern was deeply submerged in the water leaving only a small freeboard.

The "ORCA V", being a traditional vessel of wood construction and having a larger reserve buoyancy than the "FLINSTONE I" at the stern, made the same journey in identical conditions without undue difficulty.

Several operators extended the shipsides of their vessel in order to load fish on the deck; on some vessels, this construction is watertight so as to prevent sea water from gaining easy access to the vessel. This was not the case on the "FLINSTONE I". Moreover, a roller had been installed at the stern to facilitate hauling in the nets. The extension in way of the roller measured only about 0.1 m in height, and the rest of the extension measured about 0.6 m in height. This extension was completed just before the commencement of the 1987 fishing season.

On each side of the vessel, freeing ports measuring roughly 20 cm x 40 cm had been cut in the extended section of the shipside. These two freeing ports had a metal grill to keep the fish on board but nothing to stop the water from ingressing from the outside.

Two fuel tanks, one on each side, were installed in the bottom of the vessel under the forward section of the fish-well. They had a capacity of about 225 L each and were both half full when the vessel was salvaged.

Two pumps were installed in the hold aboard the "FLINSTONE I". One of them was an automatic electric submersible-type with a capacity of about 2 L/s. It was located in the lower section of the vessel under the fish-well, therefore it was inaccessible at the time of the casualty. The second pump was a gasoline-driven pump with a capacity of 1 to 2 L/s. It was located on the starboard side behind the wheel-house. It had been cleaned and inspected just before this trip because it had not been functioning satisfactorily.

According to conversations heard over the C.B. radio a few minutes before the incident, this pump was not

functioning. The operator suspected that the opening in the suction tube was obstructed by fish.

When the vessel was taken out of the water, it was noted that the suction hose was disconnected from the pump. It is not known if the crew did this in order to inspect the other end of the hose or if it became disconnected at the commencement of the voyage.

A motorized drum was located aft of the wheel-house above the main engine. This drum rolled up the nets once the fish were removed.

4. Loading of the "FLINSTONE I"

According to conversations heard over the C.B. radio before the casualty, the "FLINSTONE I" had a full load.

During this conversation at around 0010 on May 11, the operator of the "FLINSTONE I" stated having filled his vessel with the catch from two nets. After the tragedy, four nets were found wrapped around the drum.

During her last voyage, the "FLINSTONE I" had unloaded 51 boxes of herring each weighing an average 113.4 kg (250 lb). Reportedly, at that time, the vessel had about 0.2 m freeboard aft not taking into consideration the 0.1 m extension.

The swell was roughly 0.5 m in height.

5. Herring fishing season

The Department of Fisheries and Oceans sets the opening and closing dates for the fishing season in each area for each species of fish.

In 1987, the herring fishing season in the Escuminac area was open between January 1 and May 31.

The best fishing is normally carried out during spawning because the catches are usually large. Spawning had begun in the Escuminac area at the begining of May.

6. Functions and availability of Fisheries and Oceans vessels

The Fisheries and Oceans patrol vessel's main functions are to oversee and control fishing operations in the fishing zones. Some vessels, through prior arrangement, are also designated to participate in Search and Rescue

operations.

Such was the case with the "6C 4827" stationed at Richibucto. When a vessel is a designated SAR vessel, there is always one crew member onboard on a 24-hour basis. These assignments are seasonal. The aforementioned vessel was to become available for Search and Rescue at 0000, May 11. However, because of the unavailability of one of the crew members, the vessel was not available for SAR until 0800 on May 11.

The "COLONEL BARRY" stationed at Pointe-Sapin was not assigned to Search and Rescue. Consequently, there was only one crew assigned to the vessel.

7. SAR Operation

On receiving the telephone call from Escuminac at 0046, the RCC Halifax set in motion SAR operations. A total of 5 marine units and 2 air units comprising:

Five vessels	"ROBERT FOULIS" "NARWHAL" "COLONEL BARRY" "ORCA V" "6C 4827"
One helicopter	"Labrador R311"
One fixed-wing aircraft	"Buffalo R459"

participated in this search.

An area resident, having heard the radio communication of the "FLINSTONE I", telephoned the residence of the master of the "COLONEL BARRY" to inform him of the casualty. At 0059, the master of the "COLONEL BARRY" telephoned Search and Rescue for additional information on the case. He was requested to proceed to the scene. At 0125, RCC spoke to the master of the "6C 4827" at home in Richibucto and asked him to join in the search.

The "COLONEL BARRY" departed at 0130 and the "6C 4827" at 0205. The aircraft, Buffalo R459, arrived on the scene at 0231 followed by the Fisheries and Oceans patrol vessel the "COLONEL BARRY" and the Labrador R311 helicopter less than a half-hour later.

The fishing vessel "ORCA V" was only 20 minutes away from the distressed vessel but was unable to locate her.

By following directives from the "COLONEL BARRY", she approached the wreck and retrieved two of the victims.

Search and Rescue vessels responded promptly and the Fisheries and Oceans patrol vessels were also quickly made available given the circumstances of the casualty.

8. Position of the wreck

In Loran C position 14868.8 and 30866.3, Latitude 47°01.45' N, Longitude 64°42.75' W, as reported by the operator of the "FLINSTONE I" just before his vessel was flooded, the charted depth of water was about 19.2 m (63 feet).

The wreck was found in position 47°02.11' N, 64°41.61'W about one mile ENE from the reported casualty position. The water in that area is only slightly deeper.

The first vessel to arrive on the scene concentrated the search in shallower water, convinced that the "FLINSTONE I" had sunk closer to the coast. Although the vessel's 30000 Loran C co-ordinate was malfunctioning, reference to the chart would have indicated that the depth of water in way of the distressed vessel's last known position was 19.2 m; this would have allowed him to better orient his search.

9. Rescue of the victims

On arriving close to the wreck of the "FLINSTONE I", the crew of the "COLONEL BARRY" immediately recovered one of the victims. They had a lot of difficulty in hauling him aboard and, although he was still alive, he could neither move nor speak. The victim was moved to a warm place, covered with a blanket and made comfortable.

The crew of the "ORCA V" found two other victims as soon as she arrived on the scene. They showed no sign of life and were floating face down in the water. The crew also had a lot of difficulty getting them aboard because they were tangled in ropes.

At the time of writing the report, the operator's body had not yet been recovered.

10. Cause of the deaths

Autopsies were made on the bodies of the three victims and their deaths were attributed to drowning. Two of the victims tested negative for urine alcohol but the

third had an alcohol content of 20 mg%.

11. Causes of the flooding

The vessel was found half submerged and was towed back to land.

Inspection of the hull of the salvaged "FLINSTONE I" revealed no damage which would have caused her to be flooded other than by taking on water over the gunwale.

Given that the vessel was transporting a full load, that the freeboard was low, especially at the stern and that the wind and waves were coming from the stern, it is possible that the vessel shipped water over her stern and flooded the vessel.

The fish was loaded directly on the flat surface of the sole in fish-well and there was no provision made to allow water to drain into the bilge. This could allow the fish-well to fill with water and this additional weight would further submerge the already heavily laden vessel.

It is also possible that the ingress of water was from the vessel's stern, at the juncture of the deck enclosing the fish-well to the hull. In fact, these are fastened by horizontal bolts but this joint is not watertight. However, this assembly method is used only abaft the wheel-house. The difference in height between the joint and the top of the deck is minimal when the vessel is upright. Hence, in a seaway with low freeboard, this section would be submerged with each roll allowing water to find its way into the hull through this joint.

It has not been confirmed that the automatic pump was functional because a large quantity of scales was found at the bottom of the vessel that could have obstructed the suction holes. During the examination of the vessel, there was no strum box found at the end of the gasoline-driven pump suction hose. It seems that the crew did not succeed in making this pump function properly.

12. Inspection and conformity to regulations

Fishing vessels less than 15 GRT are not inspected by the Ship Safety Branch of the Canadian Coast Guard but the owners of these vessels must comply with the provisions of the Small Fishing Vessel Inspection

Regulations.

Part II, section 53 (2) of the regulations states the mandatory safety equipment required:

> Every fishing vessel not exceeding 12.2 m in length shall carry:
>
> (a) one approved lifejacket for each person on board;
>
> (b) one approved lifebuoy fitted with 27 m of line; and
>
> (c) one watertight can containing six approved self-igniting flares.

Because the "FLINSTONE I" measured less than 12.2 m, she was not required by regulations to carry a lifeboat or any other boat.

13. **Safety equipment and other objects salvaged after the casualty**

The three victims were found each wearing an adult lifejacket. A similar one was found around a vertical pipe behind the wheel-house.

These four lifejackets were the key-hole-type which had been approved by the DOT but had become obsolete through wear and improper use. All three recovered crew members were wearing these lifejackets and whilst the one who was alive was found face up in the water, the other two who showed no sign of life were floating face down in the water. These approved lifejackets are designed to float a body face up. As there were no witnesses on-scene of the casualty, the precise information on a number of variable factors could not be obtained and consequently, the reason for the persons floating face down in the water cannot be explained.

A lifebuoy was found near the wreck that the operator might have used when he abandoned the vessel.

Two children's lifejackets were found along with an orange ball, an orange canvas and seven plywood panels measuring roughly 1.83 m x 1.07 m x 1.27 cm (6 ft x 3.5 ft x 1/2 in.).

These plywood panels were used to close the fish-well and the main engine compartments. The orange canvas was

probably used to cover the fish loaded on the plywood panels above the well.

No distress signals or watertight box which may have contained them were found. No distress signal was seen at the time of the casualty.

14. Qualifications and experience of the personnel

The owner and operator of the "FLINSTONE I" started fishing commercially in 1972 and had been self-employed for about 13 years.

His three crew members were experienced fishermen in this area although they had only been employed by the owner for a short while.

Findings

Whilst returning to Richibucto with a full load of herring, at night and in good weather conditions, the small fishing vessel "FLINSTONE I" flooded on May 11, 1987 in a position between Pointe Escuminac and Pointe-Sapin resulting in the death of all her occupants.

It would appear that the following factors contributed to the flooding:

- the "FLINSTONE I" was very deeply laden at the start of her return voyage;
- there was no arrangement to permit water to drain easily into the bilge resulting in progressive flooding of the fish-well and consequently the vessel;
- the rate at which the flood water could be discharged was greatly reduced by the difficulties encountered with the operation of the bilge pumps; and
- the crew were unable to jettison fish fast enough to avoid the catastrophy.

It would appear that the four crew members lost their lives due to the following contributing factors:

- they were immersed in cold water for more than two hours;
- after loss of power due to flooding, the crew did not

use pyrotechnics to attract attention of the rescuers;

- delay caused by the defective Loran C of the first vessel to arrive on the scene resulted in loss of valuable time; and

- delay due to incorrect Loran C co-ordinates received by the second vessel to arrive on the scene.

Other Findings

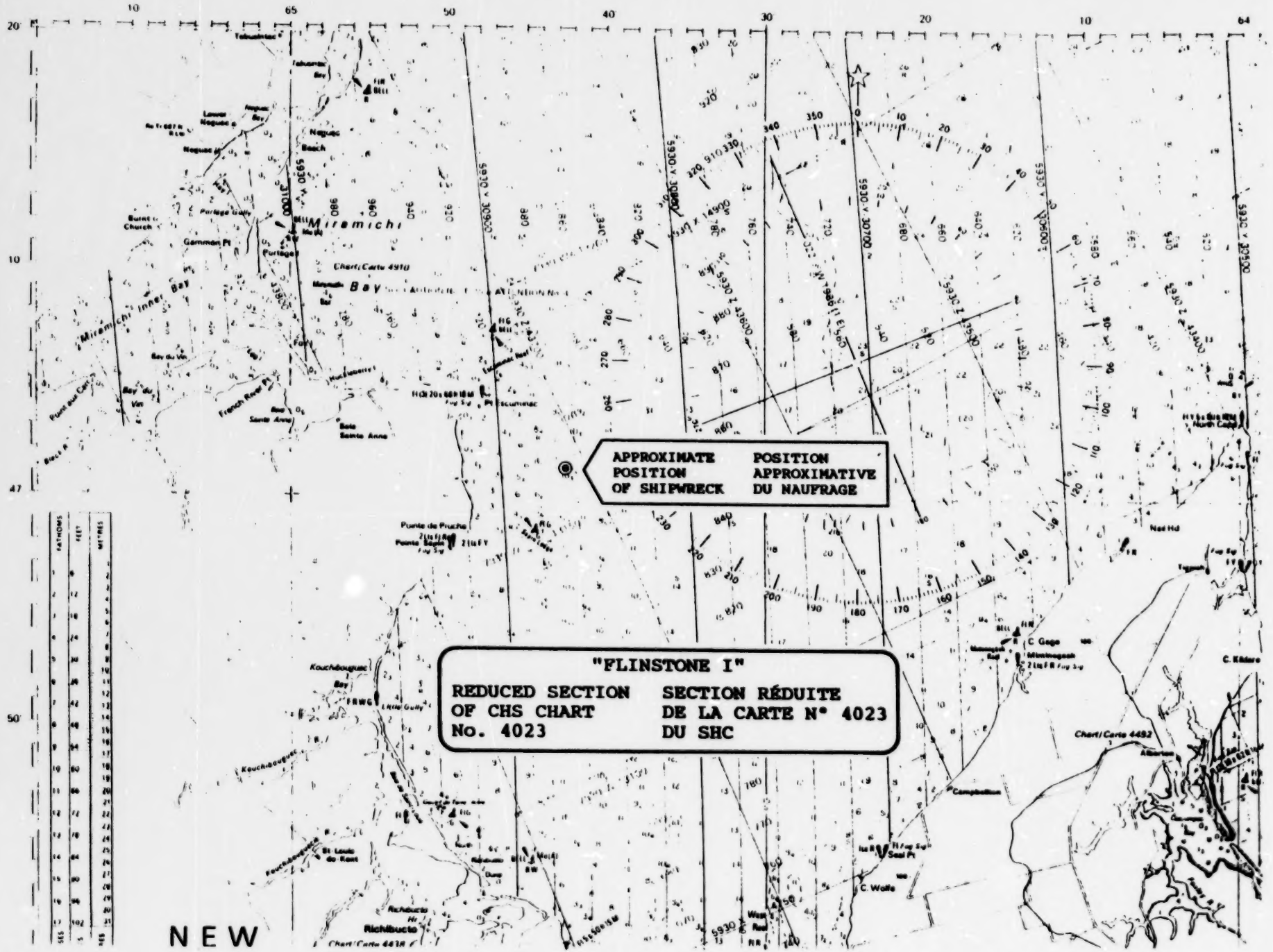
The "FLINSTONE I" did not have a dinghy or any other boat on board nor was she required to by regulations.

After the casualty, no distress signals or watertight box which may have contained them were found.

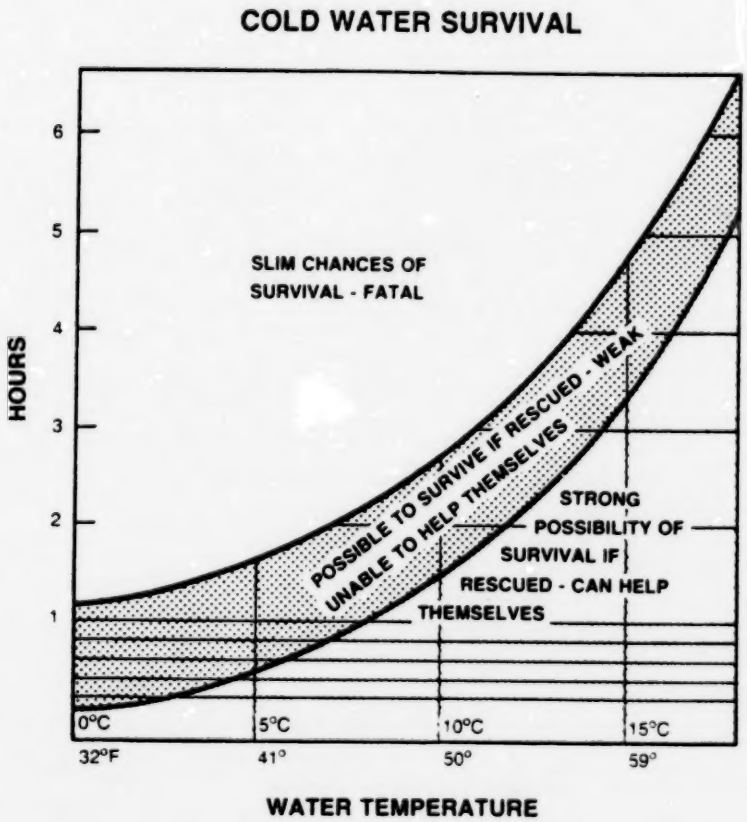
The fibreglass vessel had been recently built and had a lesser reserve buoyancy aft compared to wooden vessels of similar size and conception.

The lifejackets were in poor condition due to wear and abuse.

OTTAWA, ONTARIO
NOVEMBER, 1987.

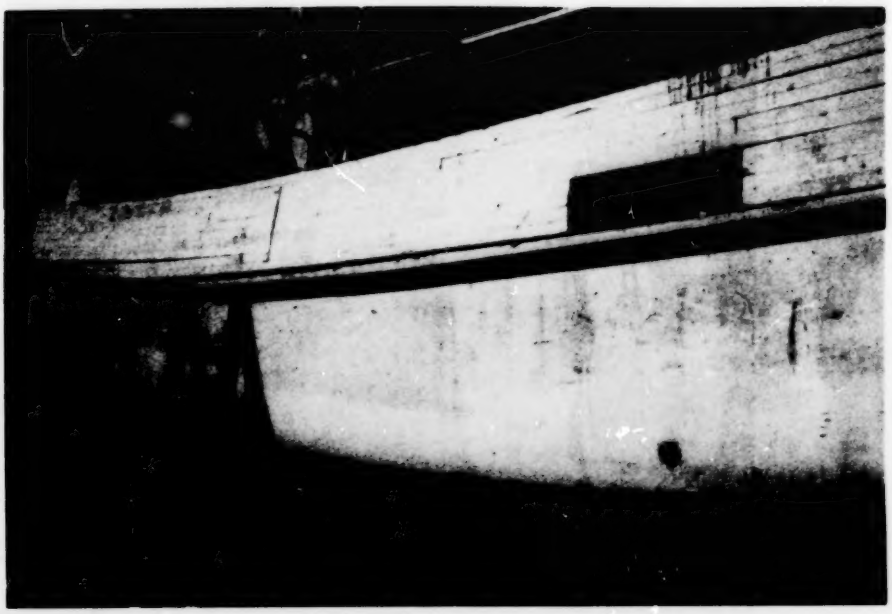

APPROXIMATE POSITION OF SHIPWRECK
POSITION APPROXIMATIVE DU NAUFRAGE
"FLINSTONE I"
REDUCED SECTION OF CHS CHART No. 4023
SECTION RÉDUITE DE LA CARTE N° 4023 DU SHC
NEW
Miramichi Bay
Miramichi Inner Bay
Chart/Carte 4510
Chart/Carte 4492
Chart/Carte 4438
FATHOMS
FEET
METRES

ANNEX I



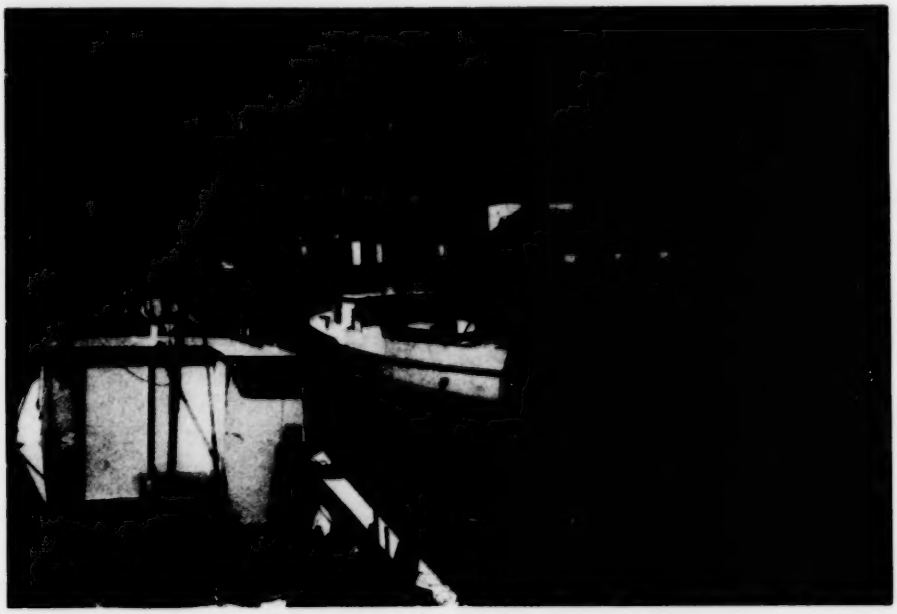
The accompanying graph shows average predicted survival times of average, adult humans in water of different temperatures. The figures are based on experimental cooling of average men and women who were holding still in ocean water and wearing a standard lifejacket and light clothing. The graph shows, for example, that predicted survival time is about 2 ½-3 hours in water of 10°C (50°F). Predicted survival time is increased by extra body fat and decreased by small body size. Although women generally possess slightly more fat than men they cool slightly faster due to their usually small body size. However, for comparable sizes, the man will cool faster.

"COLD WATER SURVIVAL"
CANADIAN RED CROSS



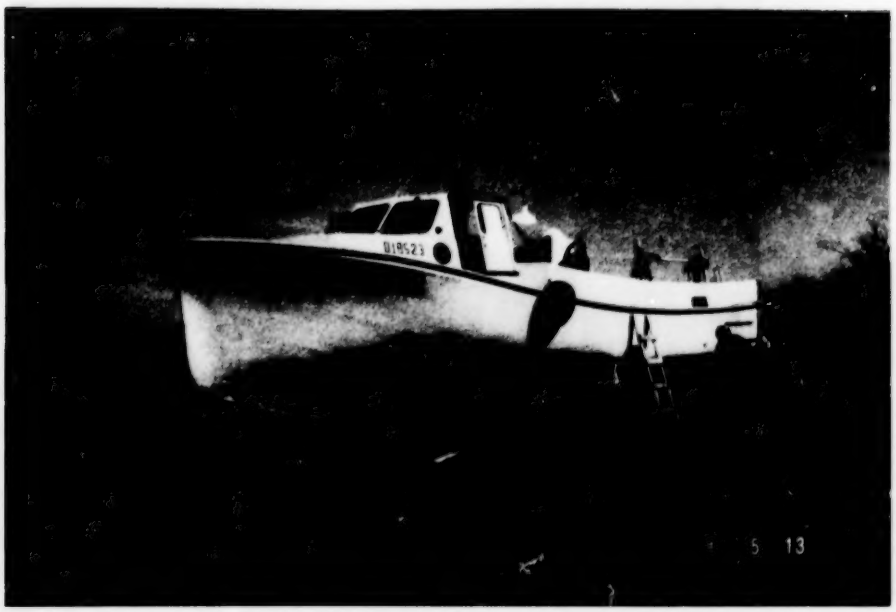
Raised sides of the "FLINSTONE I". The construction was not watertight and the freeing port, like the one shown was not fitted with a 'self-closing hinged flap'

Rehaussement des côtés du "FLINSTONE I". La construction n'était pas étanche à l'eau, les sabords de décharge tels que celui qu'on aperçoit sur la photo n'étaient pas munis de dispositifs de fermeture à charnières.



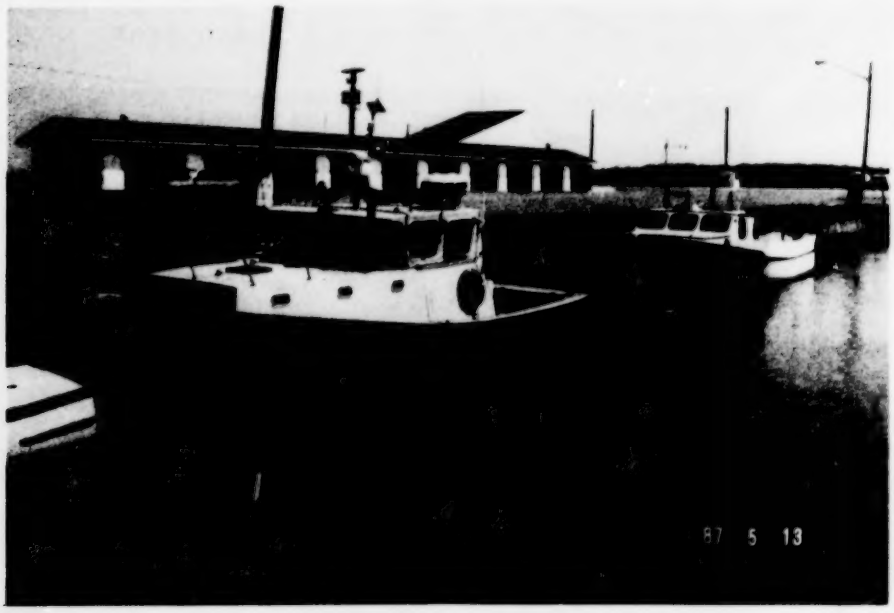
The "ORCA V". Raised sides, watertight and to the same height at the stern.

Le "ORCA V". Rehaussement étanche et à hauteur égale à l'arrière.



The "FLINSTONE I" two days after the casualty.

Le "FLINSTONE I" deux jours après le sinistre.

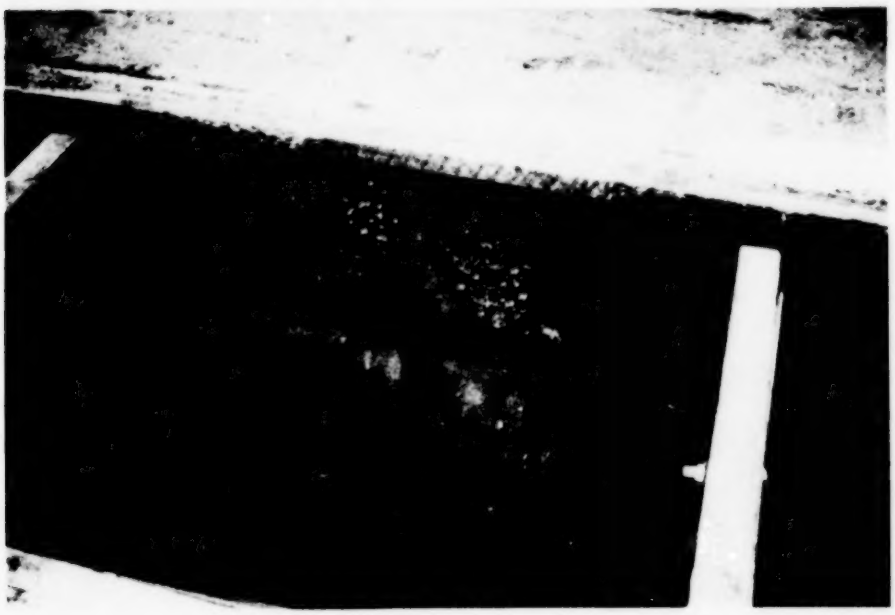


The "ORCA V" behind the patrol vessel "6C 4827" of the Department of Fisheries and Oceans.

Le bateau patrouille "6C 4827" de Pêches et Océans ainsi que le "ORCA V" à l'arrière.

Automatic electrical submersible pump aboard the "FLINSTONE I".

Pompe immersible auto-électrique du "FLINSTONE I".



Suction line to the gasoline-driven pump aboard the "FLINSTONE I".

Boyau d'aspiration de la pompe à gazoline du "FLINSTONE I".

Lifejacket worn by one of the victims.